

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
25 September 2003 (25.09.2003)

PCT

(10) International Publication Number  
WO 03/079139 A2

- (51) International Patent Classification<sup>7</sup>: G06F
- (21) International Application Number: PCT/US02/07514
- (22) International Filing Date: 12 March 2002 (12.03.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): SYN-  
CRON TECHNOLOGIES, LLC. [US/US]; Suite 112,  
14500 North Northsight Boulevard, Scottsdale, AZ 85260  
(US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): JIN, Myoung (—/US);  
8396 East Sunnyside Drive, Scottsdale, AZ 85260 (US).
- (74) Agent: SIERRA PATENT GROUP, LTD.; P.O. Box  
6149, Stateline, NV 89449 (US).

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VN, YU, ZA, ZM, ZW.

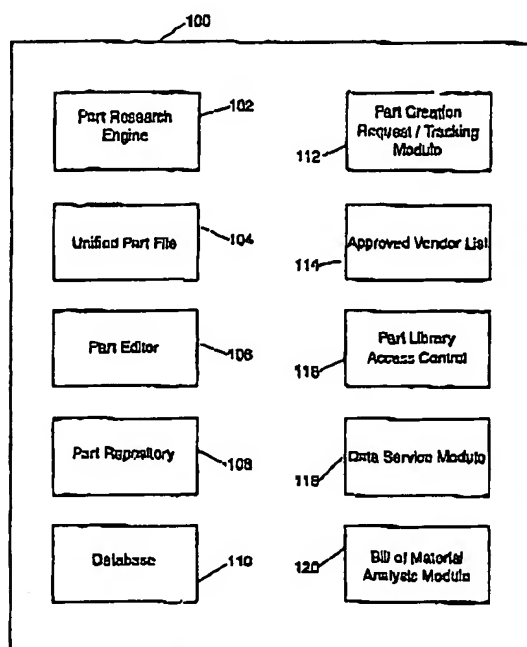
(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG).

Published:

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM, METHOD, AND COMPUTER PROGRAM PRODUCT FOR NETWORK-BASED PART MANAGEMENT  
SYSTEM



(57) Abstract: The present invention provides a part manage-  
ment system that facilitates an automated process for the de-  
sign of electronic components such as printed circuit boards.  
Manufacturing rules can be stored with part data to ensure that  
the manufacturing rules are considered throughout all aspects  
of the design process. A part research engine is provided that  
performs various functions to aid a designer in selecting parts  
to be included in the design of a component. The part research  
engine performs a global part number search. Entering a full or  
partial part number results in list of part numbers from which  
selections can be made. The part research engine also can per-  
form a comparative part search. This function is used for find-  
ing an equivalent device within and across different manufac-  
turers based on top-level parameters such as the density, pack-  
age type, I/O requirements, and other factors. Users can select  
multiple components from the competitive part list for compar-  
ing them side-by-side using a direct compare feature of part re-  
search engine. A unified part file, part repository and database  
solve the problems of fragmented part libraries, use of generic  
part data, and lack of manufacturing rules. A unified part file  
is used to store part data required to support a suite of design  
and validation activities throughout the design cycle including  
the schematic (logical) design, PCB design and layout, thermal  
analysis, signal integrity and LSI analysis, and manufacturing  
analysis. The part data represent a manufacturer specific part  
identified by the manufacturer part number (MPN) instead of

a generic part. Upon selection of a part for the schematic design, engineers of various disciplines can start investigating or preparing  
for the effect of the part selection on various aspects of the design while purchasing people can check pricing and availability of the  
part.

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